COMMENTARY
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Is the Endoscopic Grasp-and-Traction Device Useful for Endoscopic Submucosal Dissection in Treating Early Gastric Cancer?

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See "The Efficacy of an Endoscopic Grasp-and-Traction Device for Gastric Endoscopic Submucosal Dissection: An *Ex Vivo* Comparative Study (with Video)" by Dirk W. Schölvinck, Osamu Goto, Jacques J. G. H. M. Bergman, Naohisa Yahagi and Bas L. A. M. Weusten, on page 221-227.

It has become possible to achieve *en bloc* and histologically complete resection of gastric tumors with endoscopic submucosal dissection (ESD), regardless of size, allowing for the resection of tumors that would not have been previously possible.[1,2] However, ESD is a challenging technique with a higher complication rate than that of endoscopic mucosal resection. The main difficulty of ESD is the dissection of the submucosal layer. Locating the optimal plane under direct visualization reduces the possibility of perforation and unexpected, massive bleeding and improves the chance of achieving complete resection, but this procedure is particularly challenging.

There are several techniques for widening the endoscopic view during gastric ESD through counter-traction, which allows for safe and rapid dissection if performed well. These techniques can be divided into two groups according to whether a grasping point is stabilized. In the first group, a clip is used to create counter-traction accompanied by a sinker,[3] a string,[4] a magnetic anchor,[5] or a spring action S-O clip.[6] In the second group, counter-traction is achieved by using grasping forceps which are detached/attached to the endoscope[7,8] or introduced from a double-channel endoscope,[9] a transanal/anal thin endoscope,[10,11] or percutaneous trocar.[12] Oyama[13] presents various methods for creating a clear field of vision, such as changing position, a clip, external grasping forceps, internal traction, a double-channel scope, and a dual scope approach. Each of these has both advantages and disadvantages. While using a clip is simple, it can be difficult to control the counter-traction as direction is limited. Using a grasping forceps is a more flexible approach to create counter-traction, although handling the forceps can be challenging.

The EndoLifter (LA-202; Olympus Medical Systems Corp., Tokyo, Japan) was developed in order to simplify and enhance the safety profile of the submucosal dissection procedure. This traction device offers improved endoscopic view of the submucosal layer resulting in quick and safe dissection. While it does appear to be a promising tool only a single study has been published to date.[14]

In this issue of *Clinical Endoscopy*, Schölvinck et al.[15] present their experience investigating the contributory value of the EndoLifter towards the performance of ESD by analyzing its effect on the speed of submucosal dissection. This *ex vivo* comparative study was conducted in an animal model and the group compared dissection speeds (procedural duration per unit area of submucosal dissection [min/cm^2]) both with and without the EndoLifter in each group. Procedural duration for submucosal dissection (min) was defined as the duration from the point of starting a submucosal dissection after circumferential mucosal incision to the point of detachment of the lesion. In a forward approach (i.e., ESD at the posterior wall), the EndoLifter did shorten the time required for submucosal dissection—especially when correcting for the size of the resected lesion (0.56 min/cm^2 vs. 0.91 min/cm^2); however, this was not statistically significant (p=0.09). In contrast to the trends observed at the lesions of the posterior wall, the EndoLifter appeared to prolong procedure times with a retroflex approach (i.e., ESD with a lesser curvature): although not statistically different, the submucosal dissection speed was 1.06 min/cm^2 with the EndoLifter versus 0.48 min/cm^2 without the

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EndoLifter (p=0.16). Remarkably, prolonged procedure times were observed when the less experienced endoscopist used the EndoLifter in this approach (1.65 min/cm^2 with the EndoLifter vs. 0.38 min/cm^2 without the EndoLifter; p=0.03), whereas the corrected submucosal dissection time of the more experienced endoscopist did not seem to be affected at all.

This study has several important features. It is the first study in which the authors have directly demonstrated the effect of the EndoLifter on the time required for ESD. During the ESD procedure, dissecting the submucosa beneath a lesion when this is not well exposed is a lengthy process. Submucosal dissection under poor visualization could lead to unexpected complications such as perforation or massive bleeding from a large vessel. The EndoLifter is therefore intended to facilitate both a straightforward and safe procedure in a short time span. However, as the authors state in their discussion, the present study has several limitations. First, no sample size calculations were performed and the number of lesions per group was small, which may have resulted in certain trends instead of significant differences. Second, gravity may have been a confounding factor. In this study, the stomach was placed in a supine position in compliance with the training kit used, which does differ from the usual left lateral decubitus position used in clinical practice. With the stomach in the supine position, ESD procedures with lesser curvature (retroflex approach) were facilitated by the effect of gravity on the mucosal flap, possibly rendering the traction device less effective. Third, there are specific limitations resulting from the use of isolated stomachs in an *ex vivo* study. Indeed, it is difficult to assess the true feasibility and efficacy of this procedure in an *ex vivo* model in the absence of motility and breathing. Moreover, in this model we could not assess the feasibility of the EndoLifter in case of bleeding. While no difference in perforations was identified, this model is not truly suitable for safety assessment. Finally, the number of participating endoscopists was small. In conclusion, the EndoLifter does not significantly contribute towards dissection speed during gastric ESD in this *ex vivo* model, although a trend towards decreased duration of the forward approach procedure by an experienced endoscopist was observed. However, this study did have limitations that made it difficult to absolutely assess the efficacy of the EndoLifter in a clinical setting and an *in vivo* trial would be strongly recommended.

Conflicts of Interest

The author has no financial conflicts of interest.

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